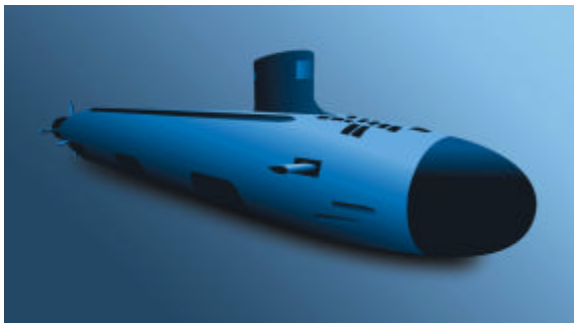




The 21st Century

For nearly fifty years following WWII, the primary mission of the U.S. Submarine Force was to deter the Soviet Union from nuclear and conventional war. The end of the Cold War has been marked by a surge of regional conflicts, which has driven the Submarine Force to greatly expand its mission focus while still serving as our nation's greatest deterrence to global nuclear war.

Submarines in an era of regional conflict. U.S. military force level reductions have placed an increased premium on timely and accurate intelligence on potential trouble spots. Submariners, utilizing skills honed during the Cold War, contribute substantially to this mission requirement by conducting Intelligence, Surveillance, and Reconnaissance (ISR) missions against a variety of current and potential future adversaries. Submarines are superb intelligence collection assets because their stealth and ability to remain on station for long periods of time often defeat a potential adversary's attempt to deny or deceive intelligence collection efforts. Because submarines get close to the action they can capture signals or observe events that are too elusive or enveloped in background noise for our satellites to detect. The intelligence gained by submarines enable us to understand an adversary's military capabilities, allows U.S. policy makers to anticipate hostilities and aids diplomatic efforts. Due to the large number of post Cold War hot spots, the number of submarine ISR missions, tasked to U.S. SSNs by the National Command Authority and joint military commanders, has doubled since 1989—despite SSN force reductions of almost 50 percent!



Artist rendition of the Virginia Class Submarine.

U.S. submarines also provide America's decision-makers with powerful offensive capabilities, should U.S. military force be required. U.S. submarines operate autonomously in the world's coastal regions where the submarines' ability to conduct land attack, covert special operations, mine warfare, and anti-submarine warfare remains a key component of our Navy's capability to operate Forward... From the Sea. For example, submarines have become increasingly important to the U.S. Navy's land attack precision strike capability. Since we first launched

Tomahawks during Operation Desert Storm, the contribution to the overall *Tomahawk* strike effort has increased as a percentage of that overall effort. In Desert Storm, submarines launched less than 5 percent of the *Tomahawks* successfully fired. However, during Operation Allied Force in Kosovo, submarines fired nearly 25 percent of *Tomahawks* launched against Serbian targets.

21st Century Warfare. The 21st Century promises new challenges and opportunities for U.S. submarines. New technologies such as unmanned undersea vehicles (UUVs), being developed for reconnaissance and mine warfare missions, hold the potential to vastly improve a submarine's mission capability. New communications capabilities mated with submarine-launched unmanned aerial vehicles (UAVs) could result in U.S. submarines independently detecting and destroying targets far inland. Stealthy mini-sub, like the Advanced SEAL Delivery System (ASDS) will launch from SSNs and take Special Forces teams hundreds of miles to their landing sites.





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Long term trends in warfare indicate that the value of submarine stealth is likely to increase in the 21st century. Well-operated submarines are not threatened by increasingly powerful missiles, weapons of mass destruction, and other threats to expeditionary forces which are expected to proliferate in the 21st century. Since adversaries cannot reliably detect the presence of submarines, U.S. SSNs can operate in heavily defended areas, detecting, reporting, and destroying any threats to U.S. forces. The submarine's contribution to U.S. national security, already significant during their first century of service, is likely to grow more important in an era where long-range precision strike capabilities, proliferation of weapons of mass destruction and other asymmetric threats to U.S. forces exist.

Virginia class submarines. The *Virginia* class is designed for 21st century warfare. They will replace the *Los Angeles* class submarines slated to retire early in the 21st century. *Virginia* class submarines have been designed to dominate the coastal regions while maintaining the U.S. preeminence in the open ocean. Design features include the following:

- 12 VLS tubes and 4 Torpedo tubes for 16 Tomahawk missile salvo capability
- Advanced sonar sensors for ASW and mine warfare
- Re-configurable torpedo room for mission specialization
- Carries Advanced SEAL Delivery System (ASDS) and a nine-man lockout trunk to enable rapid delivery of special operations forces
- Designed for launching unmanned underwater or aerial vehicles (UUV/UAV) for mine reconnaissance, intelligence gathering, and other missions
- Enhanced acoustic and non-acoustic stealth
- Enhanced communications and Electronic Support Measures (ESM) equipment.



Navy SEALs launch a Swimmer Delivery Vehicle (SDV) for a simulated attack ashore from a fast attack submarine.

General Characteristics, *Virginia* Class SSN

Builders:	General Dynamics Electric Boat Division, CT; Newport News Shipbuilding, VA
Power Plant:	One nuclear reactor, one shaft
Length:	377 feet (115 meters)
Beam:	34 feet (10.4 meters)
Displacement:	Approx. 7,800 tons (7925 metric tons)
Speed:	25+ knots (46+ kph)
Crew:	14 Officers, 120 Enlisted
Armament:	12 VLS tubes, four 21-inch (533 millimeters) torpedo tubes; <i>Tomahawk</i> missiles, Mk 48 Advanced Capability (ADCAP) torpedoes, advanced mobile mines, and unmanned undersea vehicles
Date deployed:	Scheduled for delivery in 2004

